

accordance with the new form, No. 1040, and the arrangement of the columns, therefore, differs from those previously published.

Meteorological Observations at Honolulu, November, 1900.

The station is at $21^{\circ} 18' N.$, $157^{\circ} 50' W.$
Hawaiian standard time is $10^{\text{h}} 30^{\text{m}}$ slow of Greenwich time. Honolulu local mean time is $10^{\text{h}} 31^{\text{m}}$ slow of Greenwich.

Pressure is corrected for temperature and reduced to sea level, and the gravity correction, -0.06 , has been applied.

The average direction and force of the wind and the average cloudiness for the whole day are given unless they have varied more than usual, in which case the extremes are given. The scale of wind force is 0 to 12, or Beaufort scale. Two directions of wind, or values of wind force, or amounts of cloudiness, connected by a dash, indicate change from one to the other.

The rainfall for twenty-four hours is measured at 9 a. m. local, or 7.31 p. m., Greenwich time, on the respective dates.

The rain gage, 8 inches in diameter, is 1 foot above ground. Thermometer, 9 feet above ground. Ground is 48 feet, and the barometer 50 feet above sea level.

Date.	Pressure at sea level.	During twenty-four hours preceding 1 p. m., Greenwich time, or 2.29 a. m., Honolulu time.												Total rainfall at 9 a. m., local time.	
		Temperature.		Means.		Wind.		Sea-level pressures.							
		Dry bulb.	Wet bulb.	Maximum.	Minimum.	Dew-point.	Relative humidity.	Prevailing direction.	Force.	Average cloudiness.	Maximum.	Minimum.	Total rainfall at 9 a. m., local time.		
1.	29.97	75	68	80	70	66.8	70	ne.	c-4	5	30.02	29.94	0.02		
2.	30.04	74	67	80	74	65.7	68	ne.	6-4	3	30.08	29.95	0.19		
3.	30.05	70	66.5	79	69	62.7	66	ne.	6-4	5-3	30.11	30.03	0.60		
4.	30.02	71	64	76	67	62.5	72	ne.	4-5	8-5	30.11	30.02	0.13		
5.	30.01	71	64	76	66	60.7	64	ne.	3	5	30.07	29.97	0.05		
6.	29.98	72	64.5	78	68	62.3	68	ne-nne.	2-0	2-6	30.04	29.95	0.07		
7.	29.94	73	66	78	69	63.0	70	nne.	3	3	30.04	29.93	0.03		
8.	29.89	65	68	78	68	64.2	72	nne.	1-3-0	10	29.95	29.88	0.00		
9.	29.89	75	68	79	65	65.3	78	sw.	1-0	6	29.94	29.84	0.00		
10.	29.96	72	62.5	77	72	61.5	65	n-ne.	4-6	5-2	29.93	29.91	0.00		
11.	30.01	73	68	76	72	55.7	53	nne.	6	2-5	30.06	29.95	0.00		
12.	30.00	72	63	74	72	59.3	63	n-ne.	3-4	3	30.08	29.89	0.10		
13.	29.90	69	68.5	77	72	58.7	60	ne.	3-0	3	30.02	29.89	0.02		
14.	29.79	72	66	77	67	61.0	67	nne.	2-0	8-3	29.91	29.79	0.00		
15.	29.60	76	74	77	69	67.0	83	nne-s.	2-0-3	10	29.79	29.61	2.50		
16.	29.69	73	72.5	79	72	73.3	89	sw.	3-5	10	29.73	29.57	1.50		
17.	29.83	73	70	78	71	70.0	91	s-sw.	0-1	10-7	29.88	29.71	0.03		
18.	29.88	75	73	81	69	74.0	86	s-sw.	3-0	9-7	29.89	29.80	0.02		
19.	29.98	76	74.5	81	75	74.3	88	ssw.	2	8	29.98	29.86	0.01		
20.	29.98	68	67.5	83	76	72.5	86	ssw.	2-0	7-0	30.02	29.94	0.00		
21.	29.95	70	68.7	84	68	69.7	88	sw.	1-0-1-6-0	30.02	29.95	0.00			
22.	29.94	68	67	84	68	69.5	85	ssw.	1-0	4	29.98	29.89	0.00		
23.	29.96	69	67.5	83	67	69.7	85	sw-w.	1-0	0-5	29.98	29.90	0.02		
24.	29.94	74	69	80	67	67.8	79	nw-nne.	0-4	6	30.00	29.90	0.03		
25.	29.94	74	68.5	78	73	66.7	78	ene.	4-2	9-10	30.02	29.93	0.30		
26.	29.84	72	71.3	77	71	67.7	81	ne.	2	10	29.99	29.89	5.45		
27.	29.89	70	69.3	75	71	71.7	96	ne-w.	1-0	10	29.94	29.86	0.23		
28.	29.90	69	68.3	80	70	70.7	89	s.	1-0	7-10	29.93	29.85	0.00		
29.	29.93	75	69.5	80	69	69.3	84	sw-ne.	1-2	10-7	29.96	29.86	0.00		
30.	29.94	72	67	80	72	67.0	75	ne.	2-0	7-3	29.99	29.89	0.00		
Sums.														11.30	
Means.															
Departure.														+5.78	

Mean temperature for November, 1900 ($6+2+9$) $\div 3 = 74.1$; normal is 73.8. Mean pressure for November, 1900 ($9+3$) $\div 2 = 29.929$; normal is 29.957.

*This pressure is as recorded at 1 p. m., Greenwich time. †These temperatures are observed at 6 a. m., local, or 4.31 p. m., Greenwich time. ‡These values are the means of ($6+9+2+9$) $\div 4 = 6$. §Beaufort scale.

RECENT PAPERS BEARING ON METEOROLOGY.

W. F. R. PHILLIPS, in charge of Library, etc.

The subjoined list of titles has been selected from the contents of the periodicals and serials recently received in the library of the Weather Bureau. The titles selected are of papers or other communications bearing on meteorology or cognate branches of science. This is not a complete index of the meteorological contents of all the journals from which it has been compiled; it shows only the articles that appear to the compiler likely to be of particular interest in connection with the work of the Weather Bureau:

- Annalen der Physik.* Leipzig. *Vierte folge.* Band 3.
Fischer, K. T. Ein neues Barometer (Luftdruckbarometer). P. 428.
Wedell-Wedellsborg, P. S. Notiz über die Ursachen der secularen Variationen des Erdmagnetismus. P. 540.
Wien, W. Zur Theorie der Strahlung schwarzer Körper, Kritisches. P. 530.

La Nature. Paris. 28me année.

Durand-Greville, E. Le nuage en sac ou mammatus. P. 401.

Geographische Zeitschrift. Leipzig. 6 Jahrg.

Koeppen, W. Versuch einer Klassifikation der Klimate, vorzugsweise nach ihren Beziehungen zur Pflanzenwelt. P. 593.

Bulletin of the American Geographical Society. New York. Vol. 32.

Turner, E. T. The Climate of New York. P. 101.

Nature. London. Vol. 63.

Lockyer, (Sir) Norman, and Lockyer, W. J. S. Solar Changes of Temperature and Variations in Rainfall in the region surrounding the Indian Ocean. P. 107.

Frankenfield, H. C. Kite Work of the United States Weather Bureau. P. 109.

Liveing, G. D. and Dewar, J. Spectroscopic Investigations of Gases in Atmospheric Air. P. 189.

Scientific American. New York. Vol. 83.

— Shooting at the Clouds [for dispelling hail]. P. 371.

Scientific American Supplement. New York. Vol. 50.

Cordeiro, F. P. Tropical Hurricanes. P. 20858.

Ciel et Terre. Bruxelles. 21me année.

Hepites, S. Pluie extraordinaire en Roumanie. P. 442.

Sieberg, A. Funkenblitz. P. 261.

Quarterly Journal of the Royal Meteorological Society. London. Vol. 26.

Symonds, G. J. Wiltshire Whirlwind of October, 1899. P. 261.

Marriott, William. Rainfall in the West and East of England in Relation to Altitude above Sea Level. P. 273.

Baxendell, Joseph. Description of Halliwell's Self-recording Rain Gage. P. 281.

Ackermann, Eugene. Climate and Diseases of Northern Brazil. P. 288.

Das Wetter. Berlin. 17 Jahrg.

Polis, P. Das meteorologische Observatorium Aachen. P. 241.

Kassner, C. Meteorologische Beobachtungen auf einer Reise nach Bulgarien. P. 245.

Stade, H. Winterbilder vom Brocken. P. 258.

Archives des Sciences Physiques et Naturelles. Genève. 4me Période. Tome 10.

Gautier, R. Résumé météorologique de l'année 1899 pour Genève et le Grand Saint Bernard (suite). P. 467.

Zeitschrift für Geowissenschaften. Leipzig. Band 3.

Ototsky, P. Der Einfluss der Walder auf das Grundwasser. P. 153.

CLIMATE OF SPOKANE, WASH.

By CHARLES STEWART, Observer, Weather Bureau.

Spokane is situated in eastern Washington, in latitude 47° $40'$ north, longitude 117° $25'$ west, between the Rocky and Cascade mountains, at an elevation of about 1,900 feet above the sea level.

The United States Weather Bureau office in Spokane was established February 1, 1881, giving up to date, April, 1900, meteorological records for over eighteen years. In the preparation of the accompanying tables only whole years have been considered, leaving out the years 1881 and 1900, thus giving a record for eighteen years, from 1882 to 1899, both years inclusive.

Owing to limited space, it is not practicable to remark fully upon these tables, and we shall, therefore, simply make a few statements, principally bearing upon hygiene.

In comparing climates many people are inclined to be satisfied with a mere knowledge of the mean temperature, extremes of temperature, and, perhaps, the precipitation at a place; forgetting that several places may have an equality of temperature in every respect, etc., yet, owing to other important meteorological factors, differ widely as to climate.

The higher temperatures are shown to have risen above 90° each year, rising as high as 104° , August 8, 1898; this might lead one unacquainted with the climate of Spokane to suppose that prostration from heat, sunstroke, occurs at this place, but such is not the case; on the contrary, little inconvenience seems to accompany temperatures in this place that in other places induce prostration from heat, sunstroke is entirely unknown here, save by name.

There are two climatic factors worthy of particular attention with regard to Spokane, viz, the mean daily change of temperature, and the sensible temperature. The mean daily